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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,226	02/14/2002	Mikio Okumura	21994/0040	6197

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EXAMINER

MACCHIAROLO, PETER J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

8

Office Action Summary	Applicati n N .	Applicant(s)	
	10/074,226	OKUMURA ET AL.	
	Examiner	Art Unit	
	Peter J Macchiarolo	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0202</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed 02/14/2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The publication by Yee et al has not been received. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the optical fibers as recited in claims 1 and 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. **Claims 7-9 are objected to because of the following informalities:**

6. Regarding claims 7 and 9, the term, “the plurality of driving members” lacks proper antecedent basis. The Examiner reads, “the driving member.” Furthermore, the claims are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form, since it recites the same subject matter as claims 6 and 9, respectively.

7. Regarding claim 8, the claim structure used by Applicant does not conform to standard U.S. practice, and is difficult to interpret. Specifically, the claims do not clearly contain a preamble, a transitional word, or a main body. The multiple occurrences of the word “comprising” further inhibit proper comprehension of the claim’s structure. See MPEP §608.01(m). The Examiner recommends the following claim structure:

[Preamble] [Transitional word]:

[Limitation X];

[Limitation Y]; and

[Limitation Z].

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

10. Specifically, the last clause in claim 1 and the corresponding limitation in claim 8 is unclear. This clause is interpreted to read, “a driving member incorporated in the supporting member.”

11. Regarding claims 3 and 4, the claims recites the limitation, “the outer frame of the mirror,” however, there is not proper antecedent basis for this claim limitation. The Examiner reads, “an outer portion of the mirror.” Furthermore, the limitations, “in 360/180 degrees” is not clear. The Examiner reads this to indicate relative locations where the supporting member attaches the outer frame.

12. Further, claim 5 recites, “wherein a plurality of supporting members having a different radius of concentric circle of the mirror, is connected with each other by an edge contiguous to each supporting member form a single piece.” This is not clear. The Examiner reads this to indicate there are a plurality of supporting members, each being concentric to the mirror, and having different size, and being connected with each other by an edge contiguous to each supporting member, thereby forming a single member.

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13. Further, claims 6, 7, and 9 recite, “the driving member placed symmetric with respect to the center of the mirror is controlled by supplying with an impressed voltage of zero and over values having inverted polarity compared to initial condition.” This is not clear. The Examiner reads, “the driving member is placed symmetrically about the center of the mirror and is controlled by voltage.”

14. Regarding claim 8, the second to last clause of the claim is unclear. The Examiner reads, “the driving member, being driven by voltage, is incorporated in the supporting member, and moves convexly or concavely to slope the mirror.” Furthermore, the last clause is also unclear. The Examiner reads, “deflecting an input light to the optical fibers.”

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1-4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Greywall (USPN 5684631; “Greywall”).

16. Regarding claim 1, Greywall discloses in figures 6a-6c, a mirror (8), a supporting member (6a), wherein the supporting member is connected with the mirror at least one

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edge thereof; a frame portion (4a) for holding another edge of the supporting member; and a driving member (conductive coating of 6a) incorporated in the supporting member.¹

17. The Examiner notes that the following claim limitations are drawn to a process of manufacturing which is incidental to the claimed apparatus:

“for deflecting light...at the center thereof;”

“for holding the mirror in the same plane;”

“for holding...supporting member;” and

“for inclining...desirable direction.”

18. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

19. Furthermore, the Examiner notes that the preamble recites that the light deflector is used for deflecting light to switch a plurality of cross-connected optical fibers for optical communication. This is an intended use type preamble, and is not afforded any patentable weight, since it merely recites the intended use of a light deflector. Where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone, the preamble is generally not accorded any patentable weight. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

¹ Greywall, col. 6, ll. 34-56.

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20. Regarding claim 2, Greywall discloses in figure 6a, the driving member (conductive plate 6a) is placed in each of four quadrant areas divided by two lines orthogonal to each other, which at least cross the center of the mirror (8) and a connecting portion of the mirror with the supporting member.

21. Regarding claim 3, Greywall discloses in figure 7a, a single piece of the supporting member (6a) is placed along an outer portion of the mirror in 360 degrees.

22. Regarding claim 4, Greywall discloses in figure 8a, a single piece of the supporting member (6a) is placed along an outer portion of the mirror in 180 degrees.

23. Regarding claim 6, Greywall discloses in figure 8a, that the driving member (6c) is placed symmetrically about the center of the mirror and is controlled by voltage (16c, 18c).

24. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Bernstein (USPN 6388789; "Bernstein").

25. Regarding claim 1, Bernstein discloses in figure 1a-1c, and 4c, a mirror (3a), a supporting member (2), wherein the supporting member is connected with the mirror at least one edge thereof; a frame portion (5) for holding another edge of the supporting member; and a driving member (6) incorporated in the supporting member.

26. Further, the Examiner recognizes several intended use type limitations in the claim, and are therefore afforded no patentable weight (see above).

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27. Regarding claim 5, Bernstein further discloses in figure 1a, a plurality of supporting members (2, 1), each being concentric to the mirror, and having different size, and being connected with each other by an edge contiguous to each supporting member, thereby forming a single member.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greywall, in view of Ko (USPN 6269201; "Ko").

29. Regarding claim 8, Greywall discloses in figure 6c, a method for driving a light deflector, comprising holding the mirror (8) for light deflection by the supporting member (6a) being connected with the mirror at least one edge thereof and the other edge with a frame portion (4a); the driving member (16b and conductive portion of 6a), being driven by voltage (18b), is incorporated in the supporting member (6a), and moves convexly or concavely to slope the mirror, and deflecting an input light (23) to optical fibers (25, 26, 27) by the sloping of the mirror to a desirable direction.

30. Greywall is silent to the optical fibers being cross-connected.

31. However, this is a known configuration as evidenced by Ko.²

² Ko, col. 30, ll. 38-44.

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32. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Greywall's optical fibers in a cross-connected configuration, since this is a known configuration for optical modulators and switches and allows for enhanced modulation.


Conclusion

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

34. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

35. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjm


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